

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings of claims in the application:

LISTING OF CLAIMS:

1-12 (cancelled)

13.(new) Method for receiving an ultra-wideband signal representative of symbols, this signal which is transmitted over a transmission channel comprising, over a symbol time, a series of modulated successive direct pulses, each pulse being propagated along at least one direct propagation path, with which series a plurality of separate successive secondary pulses are associated which are each propagated along a secondary propagation path, characterised in that, with the series of modulated successive direct pulses and the plurality of secondary pulses associated with each of the modulated successive direct pulses being received on the same receiving circuit, the method consists in:

- producing a composite correlation pattern which is constituted by a series of elemental correlation patterns,
- calculating the value of the global intercorrelation coefficient between each direct pulse associated with the plurality of secondary pulses and the composite correlation pattern, which allows a global correlation value to be obtained for the symbol.

14.(new) Method according to claim 13, characterised in that the series of elemental correlation patterns comprises a first elemental correlation pattern which is associated with each direct pulse and successive elemental correlation patterns which are each associated with a successive secondary pulse.

15.(new) Method according to claim 14, characterised in that the successive elemental correlation patterns are staggered over time relative to the first elemental correlation pattern by the difference in propagation time between the propagation time of the direct pulse over the direct propagation path and the propagation time of the associated secondary pulse which is propagated over the corresponding secondary propagation path.

16.(new) Method according to claim 13, characterised in that the step which consists in calculating the value of the global intercorrelation coefficient comprises:

- calculation of the elemental intercorrelation coefficient between each elemental intercorrelation pattern and the direct pulse associated with the plurality of secondary pulses;
- integration, over the symbol time, of the group of elemental intercorrelation coefficient values in order to transmit the global intercorrelation coefficient value which represents the global correlation value of the symbol.

17.(new) Method according to claim 13, characterised in that, for a countable group of pulses, direct pulse and secondary pulses, which are propagated over a direct path or secondary path of a plurality of secondary propagation paths, the method consists in retaining the first N paths, the first N paths comprising the direct path which corresponds to the shortest propagation time for the associated modulated pulse, and N-1 secondary paths which each correspond to a propagation time for a secondary pulse which is successively increasing.

18.(new) Method according to claim 13, characterised in that, for a countable group of pulses, direct pulse and secondary pulses, which are propagated over a direct path or secondary

path of a plurality of secondary propagation paths, the method consists in retaining N paths for which the amplitude of the direct pulse and secondary pulses is at a maximum.

19.(new) Method according to claim 17, characterised in that the number N of retained paths is adapted either in accordance with a selection criterion of the first N paths or in accordance with a selection criterion of the N paths which correspond to a maximum amplitude of the direct pulse and the secondary pulses in accordance with the propagation conditions, which allows the quality of the connection via ultra-wideband signal to be optimised.

20.(new) Method according to claim 13, characterised in that the step which consists in producing a composite correlation pattern consists in:

- establishing, by means of correlation over at least one symbol time, an image of the transmission channel in terms of direct pulse or secondary pulses, of the propagation time and the difference in propagation time between the direct pulse and successive secondary pulses,
- updating, by means of sliding correlation, the image of the transmission channel in order to update the appearance and disappearance of secondary propagation paths and/or the direct propagation path, and to establish, over at least one symbol time, the composite correlation pattern as an updated image of the transmission channel.

21.(new) System for receiving an ultra-wideband signal representative of symbols, this signal which is transmitted over a transmission channel comprising, over a symbol time, a series of modulated successive direct pulses, each modulated pulse being propagated along at least one direct propagation path, with which series a plurality of separate successive

secondary pulses are associated which are each propagated along a secondary propagation path, characterised in that it comprises at least:

- common means for receiving the series of modulated successive pulses and the plurality of secondary pulses associated with each of the modulated successive direct pulses, and, connected to the common receiving means,
- a means for acquiring and updating, over at least one symbol time, an image of the transmission channel, in terms of direct pulse or secondary pulses, of the propagation time and the difference in propagation time between the direct pulse and successive secondary pulses, the acquisition and updating means allowing, by means of sliding correlation, the appearance and the disappearance of secondary propagation paths and/or the principal propagation path to be updated and, over at least one symbol time, a composite correlation pattern to be established which is constituted by a series of successive elemental correlation patterns which are each associated with a direct pulse and a plurality of successive secondary pulses, the acquisition and updating means allowing a path list signal to be transmitted representing the image of the transmission channel;
- a single correlation means which receives the path list signal for direct and secondary propagation paths and which allows the value to be calculated for the global intercorrelation coefficient between each direct pulse which is associated with the plurality of secondary pulses and the composite correlation pattern, which allows a global correlation value to be obtained for the symbol.

22.(new) System according to claim 21, characterised in that each successive elemental correlation pattern is staggered over time relative to the first elemental correlation pattern associated with each direct pulse, by the difference in

propagation time between the propagation time of the direct pulse over the direct propagation path and the propagation time of the associated secondary pulse which is propagated over the corresponding secondary propagation path.

23.(new) System according to claim 22, characterised in that the acquisition and updating means comprises:

- at least one global acquisition and tracking correlation means which receives the series of successive pulses from the common receiving means and which transmits a global acquisition correlation coefficient value;
- a channel scanning and tracking module which receives at least the global acquisition correlation coefficient value and the global correlation coefficient value and which transmits, on the one hand, the path list signal for direct and secondary propagation paths and, on the other hand, a synchronisation signal to the global acquisition and tracking correlation means.

24.(new) System according to claim 23, characterised in that the global acquisition and tracking correlation means comprises:

- a correlator which receives the series of successive pulses received and a summing integrator which transmits the acquisition correlation coefficient value;
- an elemental synchronisation pattern generator which receives the synchronisation signal and which transmits an acquisition correlation pattern to the correlator, the synchronisation signal consisting in a series of successive elemental correlation pattern times which allows the path list signal to be updated for the following symbol time by means of sliding correlation based on the global correlation coefficient value transmitted by the single correlation means for the preceding symbol time, in accordance with the

appearance and disappearance of direct and secondary propagation paths in accordance with the variability of the transmission channel.

25.(new) System according to claim 21, characterised in that the path list signal transmitted by the channel scanning and tracking module is formed by the composite correlation times with the series of successive pulses received, for which the global intercorrelation coefficient value transmitted by the single correlation means is at a maximum.

26.(new) System according to claim 23, characterised in that it comprises a plurality of global acquisition and tracking correlation means which receive the series of successive pulses received, each global acquisition and tracking correlation means being associated with an elemental synchronisation pattern generator, the assembly formed by a global acquisition and tracking correlation means and by the elemental pattern generator associated therewith receiving a specific correlation time list signal transmitted by the channel scanning and tracking module, the specific correlation time list signals corresponding to segments of time which are staggered, which allows a series of successive elemental correlation patterns to be produced by means of successive complementary time segments by means of sliding correlation and the acquisition time for the image of the transmission channel to be substantially divided by the number of global acquisition and tracking correlation means which constitute the plurality of global acquisition and tracking correlation means.

27.(new) System according to claim 21, characterised in that the single correlation means comprises at least:

- an elemental correlation pattern generator and, associated with this generator,
- a module for weighting at least one of the elemental correlation patterns which constitute the composite correlation pattern.

28.(new) Method according to claim 18, characterised in that the number N of retained paths is adapted either in accordance with a selection criterion of the first N paths or in accordance with a selection criterion of the N paths which correspond to a maximum amplitude of the direct pulse and the secondary pulses in accordance with the propagation conditions, which allows the quality of the connection via ultra-wideband signal to be optimised.

29.(new) Method according to claim 14, characterised in that the step which consists in calculating the value of the global intercorrelation coefficient comprises:

- calculation of the elemental intercorrelation coefficient between each elemental intercorrelation pattern and the direct pulse associated with the plurality of secondary pulses;
- integration, over the symbol time, of the group of elemental intercorrelation coefficient values in order to transmit the global intercorrelation coefficient value which represents the global correlation value of the symbol.

30.(new) Method according to claim 15, characterised in that the step which consists in calculating the value of the global intercorrelation coefficient comprises:

- calculation of the elemental intercorrelation coefficient between each elemental intercorrelation pattern and the direct pulse associated with the plurality of secondary pulses;
- integration, over the symbol time, of the group of elemental intercorrelation coefficient values in order to transmit the

global intercorrelation coefficient value which represents the global correlation value of the symbol.

31.(new) System according to claim 22, characterised in that the single correlation means comprises at least:

- an elemental correlation pattern generator and, associated with this generator,
- a module for weighting at least one of the elemental correlation patterns which constitute the composite correlation pattern.

32.(new) System according to claim 23, characterised in that the single correlation means comprises at least:

- an elemental correlation pattern generator and, associated with this generator,
- a module for weighting at least one of the elemental correlation patterns which constitute the composite correlation pattern.